

REMARKS

Please reconsider the present application in view of the above amendments and the following remarks. Applicant thanks the Examiner for carefully considering the present application.

I. Disposition of Claims

Claims 1-35 were present in the filing of the present application. By way of the Response to the Restriction Requirement of March 5, 2003, claims 1-13, 17, 27-30, and 33-35 were withdrawn from consideration. Accordingly, claims 14-16, 18-26, 31, and 32 are currently pending in the present application. By way of this reply, claims 16, 21, and 25 have been amended, claims 14, 15, 18-20, 22-24, 26, 31, and 32 have been canceled without prejudice or disclaimer, and claims 36-39 have been added.

II. Claim Amendments

Claim 16 has been amended to recite that the optical component “for a light-emitting element” comprises “a transparent body having a reflective plane and a curved reflective surface which faces said reflective plane,” “a projection provided at a center of said reflective plane,” and “a recess, provided on said curved reflective surface, into which said light-emitting element is inserted,” where “said curved reflective surface except said recess is covered with high reflective material,” and where “said reflective surface reflects incident light directly from a light-emitting element and passes the light reflected by said curved reflective surface through.” Further, claim 16 has been amended to remove the limitations “a resin boundary surface for almost totally reflecting the light

deviated from a predetermined area in front of said element mounting position and a light reflecting member, in which said element mounting position, said resin boundary surface and said light reflecting member are positioned so that a light path from said element mounting position to the external can pass through a path which is reflected back at least more than once with each of said resin boundary surface and said light reflecting member.” No new matter has been added by way of these amendments as support for these amendments may be found, for example, in Figure 46 of the present application.

Claim 21 has been amended to remove the limitation “according to one of claims 16, 17 and 18, in which a portion of said element mounting position is a recess or an open hole.” Further, claim 21 has been amended to be directed to an “optical component” that comprises “a doughnut shaped transparent body having a reflective plane and a curved reflective surface which faces said reflective plane,” where “said curved reflective surface is covered with high reflective material.” No new matter has been added by way of these amendments as support for these amendments may be found, for example, in Figure 57 of the present application.

Claim 25 has been amended to be directed to the “optical component” of amended claim 16, where “an optical device” comprises “the optical component” and “a light-emitting element,” where “said light-emitting element is inserted in said recess,” and where “said optical component and said light-emitting element are integrated by transparent resin that fills a space between said optical component and said light-emitting element.” Further, claim 25 has been amended to remove the limitations “in which said optical component and said optically active element according to one of claims 16 to 23 are arranged by a predetermined spacing which is filled with optically transparent

materials so as to engage said optical component with said optically active element.” No new matter has been added by way of these amendments as support for these amendments may be found, for example, in Figure 46 of the present application.

III. Objection(s) to the Drawings

The drawings were objected to under 37 C.F.R. § 1.83(a) as not showing every feature of the present invention as specified in the claims of the present application. Particularly, the Examiner indicated that the feature of the light path being “reflected back at least more than once with each of the resin boundary surface and the light reflecting member” is not shown in the drawings of the present application. By way of this reply, this feature has been removed from the claims, and accordingly, withdrawal of the objection to the drawings is respectfully requested.

IV. Objection(s) to the Specification

The title of the present application was objected to as not being indicative of the present invention to which the claims are directed. By way of this reply, the title of the present application has been amended to “Transparent Optical Component for Light Emitting/Receiving Elements.” Accordingly, withdrawal of the objection to the Specification is respectfully requested.

V. Objection(s) to the Claims

37 CFR § 1.75(c)

Claims 24 and 25 were objected to under 37 C.F.R. § 1.75(c) as being in improper

form because a multiple dependent claim cannot depend from another multiple dependent claim. By way of this reply, claim 24 has been canceled, and accordingly, the § 1.75(c) objection to this claim is now moot.

With respect to claim 25, claim 25 has been amended to no longer be in multiple dependent form. Accordingly, withdrawal of the § 1.75(c) objection to this claim is respectfully requested.

Antecedent Basis Objections

Claims 14, 16, 19-23, 26, and 31 were objected to as containing antecedent basis informalities. By way of this reply, claims 14, 19, 20, 22, 23, 26, and 31 have been canceled, and accordingly, the antecedent basis objections to these claims are now moot.

With respect to claim 16, the terms “light deviated” and “external” have been removed from claim 16, and accordingly, withdrawal of the antecedent basis objection to this claim is respectfully requested.

With respect to claim 21, the term “element mounting position” has been removed from claim 16, and accordingly, withdrawal of the antecedent basis objection to this claim is respectfully requested.

VI. Rejection(s) under 35 U.S.C § 112

35 U.S.C. § 112, first paragraph

Claims 16, 19-23, and 26 were rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. Claims 19, 20, 22, 23, and 26 have been canceled by way of this reply, and accordingly, the § 112, first paragraph rejection

of these claims is now moot.

With respect to claims 16 and 21, the limitation of a light path that is “reflected back at least more than once with each of said resin boundary surface and said light reflecting member” has been removed, and accordingly, withdrawal of the § 112, first paragraph rejection of these claims is respectfully requested.

35 U.S.C. § 112, second paragraph

Claims 16, 19-24, and 26 were rejected under 35 U.S.C. § 112, second paragraph, as failing to particularly pointing out and distinctly claiming the subject matter which the Applicant regards as the invention. Claims 19, 20, 22-24, and 26 have been canceled by way of this reply, and accordingly, the § 112, second paragraph rejection of these claims is now moot.

With respect to claims 16 and 21, the phrase “such as” has been removed, and accordingly, withdrawal of the § 112, second paragraph rejection of these claims is respectfully requested.

VII. Rejection(s) Under 35 U.S.C § 102

U.S. Patent No. 4,978,843

Claims 18-23 and 26 of the present application were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,978,843 issued to Yamakawa et al. (hereinafter “Yamakawa”). Claims 18-20, 22, 23, and 26 of the present application have been canceled by way of this reply, and accordingly, the § 102 rejection of these claims is now moot. With respect to claim 21 of the present application, for the reasons set forth

below, the § 102 rejection of claim 21 is respectfully traversed.

Claim 21 of the present application has been amended to be directed to an optical component that includes, at least, a doughnut shaped transparent body having a reflective plane and a curved reflective surface that faces the reflective plane. The features recited in amended claim 21 of the present application are shown, for example, in Figure 57 of the present application. *See also* Specification, paragraphs [0178] – [0183]. Yamakawa, on the other hand, altogether fails to disclose, or otherwise teach, a doughnut shaped transparent body that has a reflective plane and a curved reflective surface that faces the reflective line as required by amended claim 21 of the present application.

In view of the above, Yamakawa fails to show or suggest the present invention as recited in amended claim 21 of the present application. Thus, amended claim 21 of the present application is patentable over Yamakawa. Dependent new claim 38 of the present application is allowable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

U.S. Patent No. 5,914,760

Claims 16, 20, 22, and 23 of the present application were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,914,760 issued to Daiku (hereinafter “Daiku”). Claims 20, 22, and 23 of the present application have been canceled by way of this reply, and accordingly, the § 102 rejection of these claims is now moot. With respect to claim 16 of the present application, for the reasons set forth below, the § 102 rejection of claim 16 is respectfully traversed.

Amended independent claim 16 of the present application has been amended to be

directed to an optical component for a light-emitting element that includes (1) a transparent body having a reflective plane and a curved reflective surface which faces the reflective plane, (2) a projection provided at a center of the reflective plane, and (3) a recess, provided on said curved reflective surface, into which the light-emitting element is inserted, where the curved reflective surface except the recess is covered with high reflective material, and where the reflective surface reflects incident light directly from a light-emitting element and passes the light reflected by the curved reflective surface through. The features recited in amended independent claim 16 of the present application are shown, for example, in Figure 46 of the present application. *See also* Specification, paragraphs [0154] – [0160]. Daiku, on the other hand, altogether fails to disclose, or otherwise teach, the limitations of an optical component as recited in amended independent claim 16 of the present application.

In view of the above, Daiku fails to show or suggest the present invention as recited in amended independent claim 16 of the present application. Thus, amended independent claim 16 of the present application is patentable over Daiku. Dependent claim 25 and new dependent claims 38 and 39 of the present application are allowable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

U.S. Patent No. 6,294,723

Claims 14, 15, and 31 of the present application were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,294,723 issued to Uematsu et al. (hereinafter “Uematsu”). By way of this reply, claims 14, 15, and 31 of the present

application have been canceled, and accordingly, the § 102 rejection of these claims is now moot.

VIII. Rejection(s) Under 35 U.S.C § 103

U.S. Patent No. 6,294,723

Claim 32 of the present application was rejected under 35 U.S.C. § 103(a) as being unpatentable over Uematsu. By way of this reply, claim 32 of the present application has been canceled, and accordingly, the § 103 rejection of this claim is now moot.

U.S. Patent No. 5,914,760

Claims 19, 21, and 26 of the present application were rejected under 35 U.S.C. § 103(a) as being unpatentable over Daiku. By way of this reply, claims 19 and 26 of the present application have been canceled, and accordingly, the § 103 rejection of these claims is now moot. With respect to claim 21 of the present application, for the reasons set forth below, the § 103 rejection of claim 21 is respectfully traversed.

Claim 21 of the present application has been amended to be directed to an optical component that includes, at least, a doughnut shaped transparent body having a reflective plane and a curved reflective surface that faces the reflective plane. The features recited in amended claim 21 of the present application are shown, for example, in Figure 57 of the present application. *See also* Specification, paragraphs [0178] – [0183]. Daiku, on the other hand, altogether fails to disclose, or otherwise teach, a doughnut shaped transparent body that has a reflective plane and a curved reflective surface that faces the

reflective line as required by amended claim 21 of the present application.

In view of the above, Daiku fails to show or suggest the present invention as recited in amended claim 21 of the present application. Thus, amended claim 21 of the present application is patentable over Daiku. Dependent new claim 38 of the present application is allowable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

IX. New Claims

New claims 36-39 have been added to the present application by way of this reply. New independent claim 36 is directed to an optical component for a light-receiving element that comprises a transparent body having a reflective plane and a curved reflective surface that faces the reflective plane, a projection provided at the center of said reflective plane; and a recess, provided on said curved reflective surface, into which said light-receiving element is inserted, where said curved reflective surface except said recess is covered with high reflective material, and where said reflective surface passes incident light from outside of said body through and reflects the light reflected by said curved reflective surface in the direction of a light-receiving element.

Further, new claim 37, which depends from new independent claim 36, refers to an "optical device" which comprises the "optical component" of new independent claim 36, where the "optical device" further comprises "a light-receiving element," where "said light-receiving element is inserted in said recess," and where "said optical component and said light-receiving element are integrated by transparent resin that fills a space between said optical component and said light-receiving element."

No new matter has been added by way of new claims 36 and 37 as support for new claims 36 and 37 may be found, for example, in Figures 48 and 49 of the present application and paragraphs [0163] – [0168] of the Specification.

New claim 38, which multiply depends from amended claims 16 and 21 and new claim 36, recites the limitation of a “Fresnel lens shaped pattern [that] is formed on said curved reflective surface.” No new matter has been added by way of new claim 38 as support for new claim 38 may be found, for example, in paragraph [0169] of the Specification and Figure 51 of the present application.

New independent claim 39 is directed to “[a]n optical component array in which a plurality of optical components according to any one of claims 16 and 36 are arranged.” No new matter has been added by way of new independent claim 39 as support for new claim 39 may be found, for example, in paragraph [0045] of the Specification.

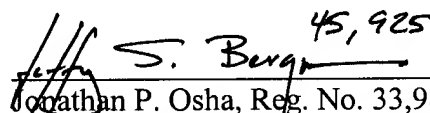
Accordingly, entry and favorable treatment of new claims 36-39 is respectfully requested.

X. Conclusion

Applicant believes this reply to be fully responsive to all outstanding issues and place this application in condition for allowance. If this belief is incorrect, or other issues arise, do not hesitate to contact the undersigned or his associates at the telephone number listed below. Please apply any charges not covered, or any credits, to Deposit Account 50-0591 (Reference Number 15115.005001).

Respectfully submitted,

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